

LAKE REGION STATE COLLEGE

Information Technology Plan July 2006

Submitted by:

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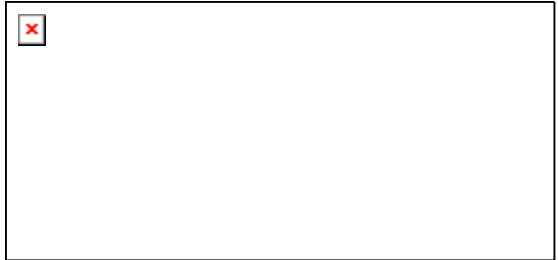
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IT OVERVIEW

Where is technology headed and how fast will it change? Dramatic advances in information technology can change the very nature of what we do. In fact, over the course of the next few years VoIP (voice over IP), videoconferencing to the desktop and wireless networks will do exactly that. These changes will enhance collaboration, unified services and social networks. We saw a change in the way we work when we implemented Enterprise Resource Planning (ERP) or ConnectND. This project will demand continuing college resources as we implement new modules, new versions, and make improvements to the current configurations. As information technology issues become more complex, it is imperative that the strategic plan, for Lake Region State College, drive the information technology strategic plan.

Technology has the ability to transform. It can transform how we communicate with our students, faculty and staff; how we use information to make better decisions; how we deliver educational programs; and how we encourage economic development for our region. A shared vision for the future will help us plan resources needed to support technological changes.



IT PLANNING PROCESS

Lake Region State College IT Plan is designed to provide an overview of future IT initiatives needed to support campus strategic planning and the budgetary forecasting to support the initiatives. Goals and objectives will be organized under the categories of Network Infrastructure; Security; Instructional Technology; Administrative, ConnectND, Systems; Desktop Support/Help Desk; Telephony; and Web Support Services.

Lake Region State College has a planning committee which assists with defining the overall strategic plans of the college. LRSC's IT plan is based upon meetings with the planning committee, technology committee, various campus departments, faculty, and state and regional organizations. IT services are provided in conjunction with the North Dakota University System, Higher Education Computer Network services, and North Dakota Information Technology Department.

BACKGROUND

Lake Region State College (LRSC) is a two-year college serving approximately 1400 students. But it is much more than that! In addition to our main campus in Devils Lake, Lake Region State College serves the needs of the state by delivering needed programs via distance education. Some examples include:

- Summer police training academy, in Fargo, based on a partnership between Lake Region State College and the Fargo Police Department. Since the partnership was formed in 2002, almost 90 police officers have graduated from the academy with about one-third of those graduates working as police officers in the Fargo area.
- Lake Region State College and other colleges in the Dakota Nursing Program collaborate to offer a one-year practical nurse program and an associate degree nursing program.
- Lake Region State College continues to be part of the NDUS Online degree program and graduated its first totally online student in 2004. Online enrollments grow each year and are an important part of our campus.
- The college provides Hometown University in other communities

In a state with declining K-12 enrollments, Lake Region State College continues to lead in outreach efforts with programs and training for local businesses. The college provides outreach offerings where requested, including:

- LRSC leads the state in dual credit
- LRSC offers educational programs at the Grand Forks Air Force Base which includes instruction in Thule, Greenland and Cavalier, ND as well as Bagdad, Iraq. With the change in mission for the Grand Forks Air Force Base we are seeing declining enrollments. The offerings at the Grand Forks Air Force Base are open to all area students.

LRSC has a firm commitment to economic development. The college has a partnership between Lake Region State College Workforce Training and UND Workforce Development designed to deliver training to the business and industry community in the Northeast quadrant of the state. As part of Governor Hoeven's Center of Excellence program, LRSC was named The Dakota Center for Technology-Optimized Agriculture. The program will allow Lake Region State College to partner with private sector companies to create quality jobs in the community and increase educational opportunities for students.

Working together with other colleges, businesses, groups, and organizations to meet the needs of North Dakota residents is an important part of LRSC's strategic plan and the Roundtable. LRSC's IT initiatives must support these collaborative initiatives. HECN's centralized CIS services benefits LRSC, as well as all campuses, and it is in the University System's interest to use centralized services in realizing economy of scale benefits.

STAFFING

Information Services at Lake Region State College is comprised of a CIO; two full-time Technical Support Specialists, one in the area of network and instructional technology support while the other supports desktop computing, print services, and a help desk. In addition, we employ a part-time IT outreach support technician at the GFAFB and approximately 2 part-time student workers. External to the central IT department LRSC's IT staff includes employees who support the Interactive Video Network (IVN), Online Learning Management System, and Web services. LRSC is in the process of hiring an Instructional Designer/Curriculum Developer who will also be included in IT staffing.

Additional staff may be needed to support new technology initiatives such as the implementation and management of a wireless network and Voice over Internet Protocol (VoIP).

NETWORK INFRASTRUCTURE

LRSC's LAN network has been stable, reliable and able to meet the needs of its users for the past several years. However, it is time to upgrade current equipment, based on a replacement cycle of three years for switches and the fact that our switches are no longer supported by Cisco. Factors that need to be considered when planning for future include:

- Transmission of voice, data and video over the network, where quality of service and Power over Ethernet are important features
- Compliance with the Communications Assistance for Law Enforcement Act (CALEA)
- Wireless access for students, faculty, staff, and authorized users on a secure, authenticated wireless network
- Bandwidth allocation, shaping, and management

The network is evolving into a complex, proactive, campus-wide information and communication system that impacts all departments. NDUS and ITD continually strive to increase bandwidth allocations to the campus and high speed Internet connections to the state. The Northern Tier network initiative should be supported.

Goals

To provide expected levels of network service LRSC strives to continually improve communications and services to its users. Wireless networks are expected in the college environment.

To provide a secure and managed network capable of meeting the demands of voice, data and video convergence

Objectives

Lake Region State College should replace approximately 25 network switches currently in use, approximate cost of \$70,000, which should be spread over several years. The current switches are no longer supported by the manufacturer. This change would occur as new ports are added to support additional wiring needs such as in the new science wing, and as funding becomes available for the replacement cycle.

The core of the LAN, the Catalyst 6500, needs to be updated to support wireless and VoIP. It should be upgraded to the Supervisor Engine 32 with Power over Ethernet (PoE) capabilities. Estimated total cost of upgrading the core is \$24,000. It would be prudent to purchase the supervisor engine 32 for approximately \$9000 in FY08 and the additional pieces should be added when either a wireless network or VoIP is implemented.

It is difficult to project the impact CALEA (Communications Assistance for Law Enforcement Act) will have on Higher Education. CALEA was designed to make it easier for law enforcement officials to tap online conversations such as e-mail, Internet-based phone, and instant messaging services. As new communication technologies take the place of "old fashioned telephone networks," law enforcement agencies need to retain the ability to conduct lawful court-ordered electronic surveillance. What this will mean to Higher Education remains unknown at the present time. The FCC can require Internet Service Providers (ISP), possibly including colleges, to redesign their networks to meet the government's surveillance needs. What is unclear is whether colleges need to replace equipment connecting their campus to the Internet (which in the case of LRSC would most likely mean a router supplied by ITD), or if the college would be required to provide information on which individual was assigned to a computer connection that was sending and receiving electronic messages in question (which may mean improved logging, authentication, and management systems).

To support VoIP the data wiring closets should be equipped with adequate power and backup power sources. Since implementation of a digital telecommunications system is several years away no projected cost is included in this report but may be a consideration in the future.

Network security is a concern to LRSC. Currently, Information Technology Services (ITS) takes steps to minimize risk exposure. LRSC has a firewall in place which protects the campus from outside attacks, provides secure VPN access to campus resources for staff and faculty, and provides minimal Intrusion Detection System (IDS). To remain secure and prepare for implementation of a wireless network LRSC should deploy a Clean Access Appliance that identifies whether machines are compliant with security policies and repairs

vulnerabilities before permitting access to the network. When increasing number of users have laptops, which do not remain safely behind the LRSC firewall, such an appliance becomes increasingly necessary. This solution has been implemented on a number of NDUS campuses and it should be implemented on our current wired network and later upgraded to work with a wireless network. Estimated total cost of hardware and software is \$39,000.

Lake Region State College has started planning for a secure, authenticated wireless campus network. The first step was to have a site survey conducted. A wireless network would allow students and other authorized users access to the network from anywhere on campus. An increasing number of students expect to be able to access a wireless network when they arrive on campus. Some students are setting up wireless access points in the resident halls. This creates problems when the wireless access points are not secure and are providing general access to others on campus.

The wireless network should consist of a minimum of 20 wireless access points to cover the entire campus; an access LAN controller; wireless location appliance; wireless control service software; software that allows authentication to the Netware; and security features. The approximate cost would be \$75000 to fully install a secure, authenticated network.

The wireless network would augment, not replace LRSC's wired network. Having two network systems will increase the workload of ITS and another technical position may be needed to support it. Security problems on a wireless network maybe difficult and time consuming to troubleshoot.

In the past, a wireless network could have been used to attract and retain students. Today, most campuses offer wireless service to students and it is no longer a competitive advantage. Not having a wireless network could be viewed as a deterrent however. If LRSC is to implement a wireless network it should be promoted in conjunction with the initiative to sell tablet PCs in the LRSC bookstore.

To support student learning, LRSC plans to replace a standard desktop computer lab with a mobile, wireless cart of tablet PCs. This will be the first implementation of wireless services on campus.

In the next biennium, LRSC should update Novell Netware which is used for authentication and, file and print services. This should have an estimated cost of over \$25,000.

SECURITY

Goals

To establish and balance the need of expanded information access with the requirements of protecting information assets from unauthorized and inappropriate use in an environment of evolving legal and regulatory restrictions.

To increase user awareness of security policies and procedures and understanding of their role in the management and stewardship of information.

To undertake, as part of the NDUS CSO committee, an IT risk assessment to identify and prioritize vulnerable areas and ways to mitigate potential risks.

Objectives

Network security: Lake Region State College realizes the importance of a systematic approach for securing information systems. As information systems become more sophisticated, their importance becomes more critical. LRSC was the first college to employ a firewall at the perimeter of our network. Now, this is commonplace. Additional network security plans were discussed in the preceding section.

Physical security: LRSC should install fans to circulate air in the wiring closets and if this is not enough to lower temperatures ITS should investigate the possibility of air conditioning to the wiring closets before interruption of service due to over heating occurs. This will become even more important when we move toward VoIP which requires running Power over Ethernet. LRSC should review its policies and procedures for disposal and redistribution of computers.

Communication security: LRSC has instituted VPN service to ensure a secure transfer of information from off campus.

Access control: This domain includes all access methods and the controls used to secure them. Access includes on-site and remote user access. The controls implemented include passwords, user rights, and monitoring systems. Only authorized users should be able to authenticate to our network. LRSC should review the current system of monitoring access and consider the implications of CALEA when authenticating users.

Business continuity: The security system needs to address the issue of restoring business operations in a timely manner. Controls should include backups, UPS, and continuation of operations plan (COOP). LRSC's current backup system is no longer able to handle the amount of information stored on its Novell server. To handle the demand for information storage, the college should purchase a new system with an estimated cost of \$4800. Replacement of current aging UPS

devices should be planned for, and the need for additional UPS systems and power generation should be addressed when planning for VoIP.

Organizational security: all employees should be aware of security systems and take measured steps to protect college assets.

INSTRUCTIONAL TECHNOLOGY

LRSC, like all colleges today, is challenged with a new generation of students expecting a campus environment that accommodates their digital lifestyle. A new teaching and learning experience is emerging — one that is more inclusive, where students are guided through curriculum that better adapts to their individual learning styles, encourages collaborative team work, and facilitates learning how to learn. Digital students tend to be hypercommunicators, constantly staying in touch through a multitude of devices; they tend to be multitaskers; and they tend to be goal oriented, ambitious and success oriented.

Goals

To leverage technology as a tool of communicating, reaching, and retaining student interest in the classroom.

To explore new technologies which could allow the college to expand its outreach without establishing a new facility or expecting students from other regions to move to North Dakota.

To enhance student engagement, learning, and collaboration within the online platform.

What really matters is what happens between and among students and teachers, both inside the classroom and out—and how individuals and small groups can use technology to enhance learning.

Objectives

LRSC should continue to offer training to faculty to promote collaborative learning within the classroom. LRSC has standardized on tablet PCs with software enabling faculty to spontaneously write out equations or examples, do quick sketches or diagrams, and have the notes projected on a screen.

LRSC should increase the number of smart classrooms, equipped with a combination of computer, Symposium, document camera, DVD/VCR, and overhead projector, available to faculty.

LRSC ITS should continue to assist faculty's exploration of new ways to use technology available, such as personal response systems, digital recording of lessons, and development of interactive learning objects.

LRSC should replace computers, other equipment, and software according to the replacement cycle as the budget allows.

LRSC should shift the delivery of instructional technology from fixed desktop computer labs to mobile tablet PC labs. LRSC ITS plans on implementing the first such computer lab in FY07. Additional wireless carts and tablet PC should be planned for to support the math and sciences programs at an estimated cost of \$25,000.

LRSC ITS should assist the bookstore in selling hardware and software to students at an education discounted price. LRSC's bookstore will be featuring the tablet PC for students. This should reinforce the commitment LRSC has to preparing regional students for today's world.

LRSC should continue to support online learning. LRSC should hire an instructional designer to assist in enhancing current online courses, to help develop new courses and programs, and develop interactive learning objects.

LRSC should provide a lab for faculty to use in developing multimedia to enhance their online courses.

LRSC should continue to work with the HECN system to leverage cost savings through software licensing deals for the NDUS. Other cost savings should be realized by working together as a University System.

Videoconferencing equipment needs to be updated to support new standards and new features to deliver improved sessions to students. Due to the changes in delivery of courses over IP to the desktop plans for implementing and supporting new technologies should be addressed.

ADMINISTRATIVE SYSTEMS, CONNECTND

Goals

To strengthen and improve the functioning and performance of the ConnectND's implementation of PeopleSoft.

Objectives

LRSC should continue to work with the ConnectND staff, following procedural processes already in place.

LRSC's ConnectND Steering Committee should continue to define what issues are most important to the campus and plan on addressing them.

LRSC should consider adding a document imaging system which could allow better workflow and tracking of information within the PeopleSoft system.

LRSC should plan for increased staffing duties involved in query writing, data warehouse mining, and institutional research based on information in PeopleSoft.

DESKTOP SUPPORT/HELPDESK

Desktop support has become more complex, user expectations have increased, and the number of services offered are expected to increase. In the near future desktop computing will be expected to support the convergence of collaboration and presence, video-telephony, and data. What this will mean, once more, is change management and increased training for staff, faculty and students.

Goals

To provide secure, standardized software and hardware for LRSC users to minimize learning new systems and optimize users' ability to help one another.

To provide training and support of technicians who need to lead technology change.

Objectives

LRSC should maintain standardized versions of software wherever possible. Ongoing cost of maintaining software should be considered.

LRSC should automate the method of pushing out security patches and upgrades. Since it is so important to apply patches in a timely manner to minimize threats LRSC should implement a Clean Access Appliance (explained in the network portion of this plan) that identifies whether machines are compliant with security and if not, helps the user to locate and download acceptable patches.

LRSC should continue to support HECN CIS services such as anti-virus software, and hopefully in the future, anti-spyware, anti-phishing software.

LRSC should prepare for increasing the IT staff, whether it is in new positions or reassignment of other technical positions, to support convergence.

TELEPHONY - VOIP

Goals

The NDUS is moving to an Enterprise Telephony IP Solution. Lake Region State College needs to position itself to be ready for the changes required by adopting Voice over Internet Protocol (VoIP). Unified messaging services may include: email, voice calls, audio conferencing, web conferencing, instant messaging, and document sharing. It should reduce long distance telephone charges and increase employee efficiency. However, VoIP will present many challenges to the IT staff.

Objectives

Planning for Voice over Internet Protocol should begin now. Migrating to a data solution will involve communication and coordination between the current telecom staff and the IT staff. Data networks must be redesigned for redundancy, robustness, quality of service, as well as security.

WEB SUPPORT SERVICES

LRSC launched a new website in May 2006. LRSC's website should meet ND State standards of accessibility.

Goals

To improve the organization, information and interactivity of our web site for targeted audiences, while supporting the goals of recruiting new students

To implement an Intranet for staff and faculty information.

Objectives

LRSC should continue to develop the website as a marketing tool to recruit new students.

LRSC should utilize the web for conducting survey research making the data gathering process faster, more efficient, and more cost effective than ever. Information gleaned from students over the web should be used in decision making and strategic planning.

The Intranet should be developed as a web repository of information, forms, and resources for staff and faculty. The Intranet is a tool that should improve workflow and increase efficiency. Electronic forms should be developed so staff

and faculty can fill them out and submit the forms electronically. The Intranet should have a positive effect on staff and faculty, keeping them informed of major organizational decisions and directions. Major documents should be posted to the Intranet and available to all staff and faculty regardless of location. This is becoming more important as we have employees spread throughout the region and in other states and countries.

Lake Region State
 College
 LRSC IT Budget
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 701-662-1505
 IT FTEs = 5.8
 Vacant IT FTEs = 1.5

<u>Account Code</u>	<u>Account Code Desc</u>	<u>05-07 Biennium</u>	<u>07-09 Request</u>	<u>09-11 Estimate</u>
510000	Salaries and Wages - Centralized	274,368	356,528	378,240
510000	Salaries and Wages - Decentralized	18,151	20,080	21,350
516000	Benefits - Centralized	101,753	156,550	162,000
516000	Benefits - Decentralized	7,242	8,686	10,500
611000	Professional Development	3,022	4,000	5,000
521000	Travel (As relates to Professional Dev.)	10,490	12,000	12,000
602000	IT Telephone	55,632	65,500	68,500
531000	IT Software/Supplies	83,481	127,500	103,500
581035, 581040, 581045, 591070, 621230, 621235,				
623090	IT Contractual Services and Repairs	147,354	195,000	152,000
621320	Online Database Services (eCollege)	236,000	265,000	285,000
551000	IT Equipment under \$5000	117,230	120,000	60,000
693000	IT Equipment \$5000 and over	<u>15,000</u>	<u>30,000</u>	<u>54,500</u>
Total Expenditures		1,069,723	1,360,844	1,312,590

<u>Funding Source</u>	<u>Funding Source Desc</u>			
450000	Federal Grants and Contracts	44,871	-	-
460000	Tuition and Fees	247,817	183,767	93,350
461000	State Appropriations	<u>777,035</u>	<u>1,177,077</u>	<u>1,219,240</u>
Total Funding Sources		1,069,723	1,360,844	1,312,590